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HARVEY, DIONNE

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/023,279	Applicant(s) Rubinstein
	Examiner Dionne Harvey	Art Unit 2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Oct 7, 2002* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-31* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Response to Amendment

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Drawings

The drawings are objected to because prior art figure 15 is not provided in the illustrated drawings. A proposed drawing correction or corrected drawings are required in reply to the Office action.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-8,11-14,16 and 18-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Hochmair (US 4,357,497).

Regarding claims 1 and 22,

Hochmair teaches a cochlear implant system, comprising: a signal generator (74) that generates a second signal(75); a signal processor(see figure 2) that combines a first signal(63,71) that represents sound and a second signal(75) having a frequency above *approximately* 2kHz to output a combined signal (76,78); and stimulation unit(see figures 3,4 and 5; see device-90 and electrodes-92; also see figure 10) coupled to the signal processor that receives the combined signal from the signal processor. Hochmair teaches that the pulse repetition rate may vary and further teaches a carrier signal pulse train of 12 megahertz and 31 megahertz (column 5, lines 37-65). Since page 14 of the Applicant's specification defines pseudospontaneous activity as the resulting from delivery of a high rate pulse train directly to the auditory nerve, Hochmair therefore teaches that the second signal is capable of causing pseudospontaneous activity, as claimed.

Regarding claim 2,

In figure 5, Hochmair teaches that the stimulation unit is an electrode array(92) coupled to the auditory nerve (see column 6, lines 59-63).

Regarding claims 3 and 23,

Hochmair teaches that the first signal is applied to a subset of electrodes in the electrode array, and the second signal is applied to a second subset of electrodes in the electrode array, as broadly claimed.

Regarding claim 4,

Hochmair teaches that the second signal is at a frequency above *approximately* 2kHz, as broadly claimed.

Regarding claims 5,6 and 25,

Since Hochmair teaches a plurality of electrodes, it appears that Hochmair teaches pseudo spontaneous activity in a plurality of nerve fibers in the auditory canal.

Regarding claim 7,

Shown in Figure 2, Hochmair teaches summing the first and second signals, as broadly claimed.

Regarding claim 8,

Hochmair teaches a microphone(52) that generates a first signal, the microphone being coupled to the signal processor (see figure 2).

Regarding claim 11,

The method of claim 11 is rejected for the same reasons set forth in the rejection of claims 1 and 22 as being inherently taught by the apparatus of claims 1 and 22.

Regarding claim 12,

Hochmair teaches that the combined signal is applied to the auditory nerve and the first signal is received from the signal processor.

Regarding claim 13,

Hochmair teaches that the first signal represents at least one of speech, emergency signals and control information.

Regarding claim 14,

Hochmair teaches an inner implant capable of performing the steps of receiving through applying, as broadly claimed.

Regarding claim 16,

Hochmair teaches an auditory prosthesis(90) adapted to stimulate the auditory nerve comprising: pseudo spontaneous generation means; a transducer means(52), a pseudo spontaneous driving signal (75); and stimulation means (90,92) operatively coupled to the electrical input signals(76,78,81,82) generated by the transducer means signal generator wherein at least one of a plurality of electrical signals is capable of causing activity in a plurality of nerve fibers of an auditory nerve (Since page 14 of the Applicant's specification defines pseudo spontaneous activity as the result of delivery of a high rate pulse train directly to the auditory nerve, Hochmair teaches that the second signal is capable of causing pseudo spontaneous activity)

Regarding claims 18 and 21,

Hochmair teaches that the second signal is at a frequency above *approximately* 2k HZ, as broadly claimed.

Regarding claim 19,

It appears that Hochmair teaches that applying the combined signal generates substantially continuous activity, thus permitting the sensation of hearing as disclosed in column 2.

Regarding claim 20,

Hochmair teaches that the second signal is not continuously applied.

Regarding claim 24,

By the Applicant's definition, Hochmair teaches pseudo spontaneous activity and therefore teaches that the electrical stimulation causes statistically independent activity in a plurality of nerve fibers in the auditory nerve.

Regarding claim 26,

Hochmair teaches that the second signal is at a frequency above *approximately* 2k HZ, as broadly claimed.

Regarding claim 27,

Hochmair teaches that the prosthesis(90) is a cochlear implant applying current to the auditory nerve.

Regarding claim 28,

It appears that Hochmair teaches that the pseudo spontaneous activity continues after the second signal has stopped, thus permitting the sensation of hearing.

Regarding claim 29,

The method of claim 29 is rejected for the same reasons set forth in the rejection of claim 16 as being inherently taught by the apparatus of claim 16.

Regarding claim 30,

Hochmair teaches that the second signal is at a frequency above *approximately* 2k HZ, as broadly claimed.

Regarding claim 31,

Hochmair teaches that the prosthesis is a cochlear implant applying current to the auditory nerve.

2. Claims 22 and 24-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Dormer (US Re 32,947).

Regarding claim 22,

Dormer teaches a neural prosthetic apparatus, comprising: a signal generator (36) that generates a second signal; a signal processor (34) that combines a first signal(30) that represents sound and a second signal(36) to output a combined signal; and stimulation unit(6) coupled to the signal processor that receives the combined signal from the signal processor for application to the auditory nerve, wherein the second signal includes at least fluctuations in amplitude greater than a prescribed amount at a frequency above approximately 2kHz (see column 4, lines 50-58).

Regarding claim 24,

By the Applicant's definition, Hochmair teaches pseudo spontaneous activity and therefore teaches that the electrical stimulation causes statistically independent activity in a plurality of nerve fibers in the auditory nerve.

Regarding claim 25,

Since Hochmair teaches a plurality of electrodes, it appears that Hochmair teaches pseudo spontaneous activity in a plurality of nerve fibers in the auditory canal.

Regarding claim 26,

Hochmair teaches that the second signal is at a frequency above *approximately* 2k HZ, as broadly claimed.

Regarding claim 27,

Hochmair teaches that the prosthesis(90) is a cochlear implant applying current to the auditory nerve.

Regarding claim 28,

It appears that Hochmair teaches that the pseudo spontaneous activity continues after the second signal has stopped, thus permitting the sensation of hearing.

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 9,10,15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hochmair (US 4,357,497).

Regarding claims 9,15 and 17, Hochmair fails to specifically teach that the signals are combined by adding, multiplying or an AND operator. However, the Examiner takes the Official Notice that the use of such operators when summing signals is well known in the art and it would have been obvious to one of ordinary skill in the art at the time of the invention to employ any one of a number of combining methods to transmit a plurality of signals.

Regarding claim 10, Hochmair fails to specifically teach coupling between the stimulation unit and signal processor via wire. However, the Examiner takes the Official Notice that various wireless or wired coupling techniques for transmitting information are well known in the art and it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute a coupling method which includes a lead wire of sorts for that of Hochmair, as an alternative method for coupling information between the processor and the implanted stimulator (Also see BALL US 6,217,508 or LOEB US 5,571,148).

Response to Arguments

Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

BALL US 6,217,508 teaches information coupling via lead wire.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statements for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Harvey whose telephone number is (703) 305-1111. The examiner can normally be reached on Monday through Friday from 8:30am to 6:00pm.

Any responses to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC 20231

or faxed to:

(703) 308-6306, for formal communications for entry

Or:

(703) 308-6296, for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor(Receptionist)

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached at (703) 305-4708.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Harvey whose telephone number is (703) 305-1111.

D.H.

CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600